APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,542	12/12/2003	Jae Gark Choi	51876P209C	9698

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EXAMINER
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ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/734,542	CHOI ET AL.
	Examiner	Art Unit	
	Tung Vo	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 July 2008</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-4 and 6</u> is/are pending in the application.
    4a) Of the above claim(s) <u>5 and 7</u> is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-4 and 6</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>12/12/03</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>07/08/08</u>.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 07/08/08 has been entered.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et

al. (US 6,400,831) in view of Rodriguez (US 6,329,379).

Re claim 1, Lee teaches a video object segmentation method applicable to a video

system, comprising the steps of: a) defining and primarily segmenting objects existing in a frame

of a video sequence semi-manually (100 of fig. 1; wherein figure 11 shows defining and

segmenting objects); if the user designates manually a rough boundary line of the object within

the frame (110 of fig. 1, Define Approximate Boundary, col. 6, lines 31-38), then the object

within the frame is automatically segmented based on the designation-related information (e.g.

112, 102-106 of fig. 1), a color information of the first image (col. 6, lines 26-30); b)

automatically segmenting the objects defined and segmented the first frame (F0, 100 of fig. 2) in

a second frame (F1 of fig. 2) within a moving video sequence (video is moving video sequence,

col. 3, lines 40-50) by performing object-tracking based on movement of the objects defined and

segmented in the first frame (108 of fig. 2; col. 4, lines 6-8, note objects are identified according

to a semantic basis and their movement tracked throughout video frames, F0, F1, and F2 of fig.

2).

It is noted that Lee does not particularly teach a brightness information of the segmented

object as claimed.

However, Rodriguez teaches a brightness information of the segments (col. 5, lines 58-

67).

Therefore, taking the teachings of Lee and Rodriguez as a whole, it would have been

obvious to one of ordinary skill in the art to modify Rodriguez into the method of Lee to reduce

the chance of incorporating unwanted features in one of the members of a given pair of segments

while relieving the user of the tedium of accurately tracing objects.

Re claim 2, Lee further discloses the steps of: c) determining whether any scene change is

made between consecutive frames or any new object other than the primarily segmented object

appears within the video sequence being automatically segmented, when repeatedly performing

the step b) for consecutive frames (Col. 4, lines 11-17; Note Global motion estimation is used to

provide a very complete motion description for scene change from frame to frame, and is

employed to track object motion during unsupervised processing); and d) repeatedly performing

the first step, if the answer of the step of determining is positive (Note I frame is detected, which

inherently means a new scene in a video sequence and the system repeatedly segments video

objects (fig. 2) in the video sequence; col. 3, lines 49-51, Note automatic processing is repeated

for subsequent video frames).

Re claim 3, Lee further discloses the steps of: e) examining the quality of automatically

segmented results (100 of fig. 1), if there is no scene change between consecutive frames and any

new object other than the primarily segmented object does not appear within the video sequence

being automatically segmented (col. 6, line 60-col. 7, line 12); f) performing the second step, if

the quality of automatically segmented results is satisfactory (116 and 118 of fig. 2, F0 and F1

are compared to produce a video object V0); and g) repeatedly performing the first step, if the

quality of automatically segmented results is not satisfactory (col. 7, lines 12-36).

Re claim 4, Lee further discloses wherein the first step of primarily segmentation is made

by segmenting the objects within the frame in completely manual using an user interface tool

(figs. 1 and 2; col. 5, lines 40-67).

Re claim 6, Lee further discloses wherein the second step of automatically segmentation

comprises the step of: tracking the object region in the current frame to which the primarily

segmented video object in the previous frame is moved, so as to segment the object within the

frame of the consecutive frames (col. 3, lines 60-63).

3.   Claims 1-2, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Hampapur et al. (US 6,738,100).

Re claim 1, Hampapur discloses a video object segmentation method applicable to a

video system, comprising the steps of: a) defining and primarily segmenting objects existing in a

first frame of a video sequence semi-manually (fig. 2, Note see USER QUERY INTERACTION

of fig. 1, See also figure 2, wherein objects are segmented in image 1, BROWN BULDING,

BLUE SKY, and GREEN LAWNS)

Since Hampapur teaches a system for automatically processing a video sequence to

extract metadata that provides an adequate visual representation of the video, this would fairly

suggest that when the user selects the segmented video, the system automatically retrieves the

segmented video based on the user define, this show the segmentation of video object is semi-

manually.

Hampapur further teaches a user-selected video segment to identify the keyframe, which

is the user designates manually a rough boundary line of the object within the frame (col. 3, lines

11-14), and the object within the frame is automatically segmented based on the designation-

related information, a brightness information of the first frame and a color information of the

first frame (e.g. fig. 2, and fig. 6).

b) automatically segmenting the objects defined and segmented the first frame (extracting

each of the objects in image 1 of fig. 2) in a second frame (IMAGE 2 of fig. 2) within a moving

video sequence (fig. 2, see also figs. 9 and 10, Note objects within a video sequence) by

performing object-tracking based on movement of the objects defined and segmented in the first

frame (the comparison of IMAGE 1 AND IMAGE 2 of figure 2, to track objects, BUILDING

AND CAR) .

Re claim 2, Hampapur further teaches the steps of: c) determining whether any scene

change is made between consecutive frames or any new object other than the primarily

segmented object appears within the video sequence being automatically segmented, when

repeatedly performing the step (col. 3, lines 32-49); b) for consecutive frames (fig. 2); and d)

repeatedly performing the first step, if the answer of the step of determining is positive (col. 3, lines 21-25, Note the two stage process is then repeated to identify additional keyframes until the end of the video. If a particular frame does not exceed either the first or second threshold, the next frame, after a user-selectable time delta, is processed).

Re claim 4, Hampapur further teaches wherein the first step of primarily segmentation is made by segmenting the objects within the frame in completely manual using an user interface tool (USER QUERY INTERACTION of fig. 1).

Re claim 6, Hampapur further teaches wherein the second step of automatically segmentation comprises the step of: tracking the object region in the current frame to which the primarily segmented video object in the previous frame is moved, so as to segment the object within the frame of the consecutive frames (fig. 8).

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yokoyama (US 5,715,006) discloses apparatus for and method of motion compensation with boundary correction for moving picture.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tung Vo/

Primary Examiner, Art Unit 2621